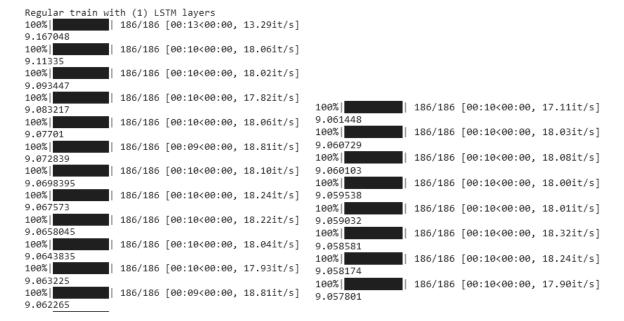
# עבודה 5 – יהב יהושוע בריח 326295417, איתי יהודה בנדרסקי 326621927

# רשת עם שכבת LSTM אחת וכיוון אימון רגיל:

- סעיף 4 - אימון המודל



# - perplexity סעיפים 2,8 - תוצאות ה

```
Perplexity of Regular LSTM (1) on train data: 9030.384354111118

Perplexity of Regular LSTM (1) on validation data: 9047.710088073061

Perplexity of Regular LSTM (1) on test data: 9029.635745007196
```

# - 6,9 סעיפים

```
WARNING:tensorflow:5 out of the last 11 calls to <functio
                 Os 215ms/step
1/1 -
1/1 -

    0s 34ms/step

<ipython-input-32-6f16fd6f58d8>:28: DeprecationWarning: C
 tokens[i] = next_token
1/1 -
                    — 0s 34ms/step
1/1 ·

    0s 32ms/step

                  ── 0s 32ms/step
1/1 —
I love <UNK> <UNK> <UNK> <UNK> <UNK>
                   — 0s 207ms/step
Probability of this sentence: 1.3460421302289797e-09
### TEMP 1
1/1 -

    0s 39ms/step

1/1
                     — 0s 42ms/step
1/1
                     — 0s 33ms/step
                     — 0s 35ms/step
1/1 ·
1/1 -
                       - 0s 32ms/step
I love Jason bananas uniquely Moore positive
                 0s 34ms/step
Probability of this sentence: 1.9977483266594725e-54
```

### TEMP 0 1

```
### TEMP 10
             Os 32ms/step
Os 32ms/step
1/1 ---
1/1 -
1/1 —
            Os 32ms/step
1/1 — 0s 33ms/step
1/1 — 0s 33ms/step
I love this argument modern coalition via
1/1 — 0s 52ms/step
Probability of this sentence: 1.8996037019884248e-54
```

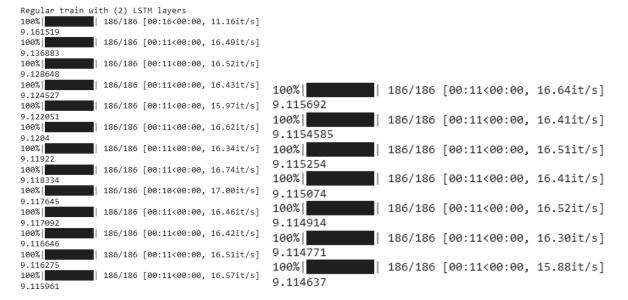
Probability of "I love cupcakes": 0

- 7 סעיף

Enter word: love Predict Next Word Predicted word for "love": -LRB-1/1 \_\_\_\_\_\_ 0s 30ms/step -LRB-

# רשת עם שתי שכבת LSTM וכיוון אימון רגיל:

# - סעיף 4 - אימון המודל



# - perplexity סעיפים 2,8 - תוצאות ה

```
Perplexity of Regular LSTM (2) on train data: 9030.428480562035
Perplexity of Regular LSTM (2) on validation data: 9047.758108061264
Perplexity of Regular LSTM (2) on test data: 9029.6766489254
```

#### - 6,9 סעיפים

```
### TEMP 0.1
1/1 -

    0s 293ms/step

                         - 0s 36ms/step
1/1
                         - 0s 34ms/step
1/1
1/1
                         - 0s 37ms/step
1/1 -
                        0s 33ms/step
I love <UNK> <UNK> centres <UNK> <UNK>
                        − 0s 278ms/step
Probability of this sentence: 8.553202977690913e-20
### TEMP 1
                        0s 38ms/step
1/1 -
                        Os 34ms/step
1/1
                         - 0s 35ms/step
1/1
1/1
                         - 0s 33ms/step
1/1 -

    0s 34ms/step

I love worldwide literally includes cruise Fish
                        - 0s 34ms/step
Probability of this sentence: 9.27485223265458e-56
### TEMP 10
1/1 -
                          0s 34ms/step
                        - 0s 39ms/step
1/1 -
1/1 -
                        - 0s 50ms/step
1/1

    0s 63ms/step

1/1 -

    0s 65ms/step

I love northwestern Dance Authority initially Birds
                        - 0s 52ms/step
Probability of this sentence: 9.325960358982769e-56
```

Probability of "I love cupcakes": 0

Enter word:	love		
Predict Nex	t Word		
Predicted word	for "love": June		
1/1		- 05	29ms/step
June			

# <u>רשת עם שכבת LSTM אחת וכיוון אימון הפוך:</u>

# - סעיף 4 - אימון המודל

```
Reverse train with (1) LSTM layers
100%|
          | 186/186 [00:14<00:00, 12.58it/s]
9.168464
100%|
            | 186/186 [00:10<00:00, 18.58it/s]
9.140318
100%|
             | 186/186 [00:10<00:00, 18.16it/s]
9.130934
            | 186/186 [00:10<00:00, 17.93it/s]
100%
9.12624
             | 186/186 [00:10<00:00, 17.98it/s]
100%|
                                             100%
                                                            | 186/186 [00:10<00:00, 18.03it/s]
9.123422
                                             9.11618
100%
            | 186/186 [00:10<00:00, 18.00it/s]
9.12154
                                             100%
                                                              | 186/186 [00:09<00:00, 18.80it/s]
            | 186/186 [00:10<00:00, 18.02it/s]
100%
                                             9.115914
9.120196
                                             100%|
                                                              | 186/186 [00:10<00:00, 17.96it/s]
100%|
            | 186/186 [00:10<00:00, 18.46it/s]
                                             9.115682
9.119188
            | 186/186 [00:10<00:00, 18.56it/s] 100%|
100%
                                                              | 186/186 [00:10<00:00, 17.88it/s]
9.118404
                                             9.115477
100%|
            | 186/186 [00:10<00:00, 18.10it/s]
                                             100%
                                                             | 186/186 [00:10<00:00, 17.90it/s]
9.117776
             | 186/186 [00:10<00:00, 17.97it/s] 9.1152935
100%|
9.117268
                                             100%
                                                             | 186/186 [00:10<00:00, 17.82it/s]
              186/186 [00:10<00:00, 17.17it/s]
100%
                                             9.11513
9.116845
                                             100%
                                                              | 186/186 [00:10<00:00, 17.74it/s]
            | 186/186 [00:10<00:00, 17.92it/s]
100%
                                             9.11498
9.116487
```

#### - perplexity סעיפים 2,8 - תוצאות ה

```
Perplexity of Reverse LSTM (1) on train data: 9030.464815114843
Perplexity of Reverse LSTM (1) on validation data: 9047.792997743809
Perplexity of Reverse LSTM (1) on test data: 9029.712170899431
```

#### - 6.9 סעיפים

```
### TEMP 0.1
1/1 -
                         • 0s 225ms/step
1/1
                         - 0s 37ms/step
                         - 0s 41ms/step
1/1 -
1/1

    0s 40ms/step

                         • 0s 39ms/step
1/1 -
I love effort <UNK> following Antilles <UNK>
                         • 0s 250ms/step
Probability of this sentence: 4.8394844635390655e-42
### TEMP 1
1/1 -
                         0s 38ms/step
1/1

    0s 36ms/step

1/1 -

    0s 37ms/step

1/1
                         - 0s 36ms/step

    Os 40ms/step

1/1 -
I love appeared 53 regiments -RCB- celebrating
                         - 0s 36ms/step
Probability of this sentence: 6.15591106074141e-51
### TEMP 10
1/1 .

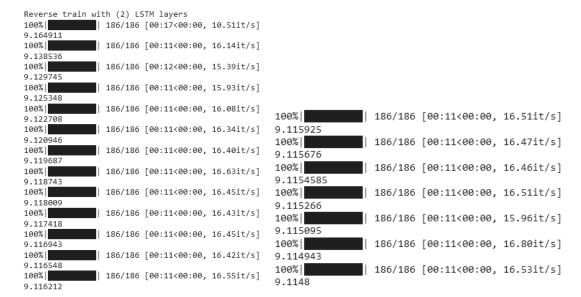
    0s 42ms/step

1/1
                          - 0s 39ms/step
1/1
                          - 0s 40ms/step
1/1
                         - 0s 40ms/step
1/1 ·
                          - 0s 38ms/step
I love published RC4 worker breeding 1834
                         0s 39ms/step
Probability of this sentence: 3.426845784806609e-50
Probability of "I love cupcakes": 0
```

Enter word:	love		
Predict Nex	t Word		
Predicted word	for "love": Lahore		
1/1		05	132ms/step
Lahore			

# רשת עם שתי שכבת LSTM וכיוון אימון הפוך:

# - סעיף 4 - אימון המודל



#### - perplexity - תוצאות ה

Perplexity of Reverse LSTM (2) on train data: 9030.464722187415

Perplexity of Reverse LSTM (2) on validation data: 9047.793748061038

Perplexity of Reverse LSTM (2) on test data: 9029.712529707956

#### - 6,9 סעיפים

```
0s 288ms/step
1/1 -
1/1
                        - 0s 33ms/step
1/1 ·
                        - 0s 34ms/step
1/1
                        - 0s 44ms/step
1/1 -
                        - 0s 37ms/step
I love <UNK> Martinus <UNK> <UNK> <UNK>
                        - 0s 289ms/step
Probability of this sentence: 3.772950250863507e-27
### TEMP 1
1/1 -
                        0s 38ms/step
1/1
                        - 0s 35ms/step
1/1 ·
                        - 0s 35ms/step
1/1
                        - 0s 33ms/step
1/1 -

    0s 33ms/step

I love hexadecimal brother Works extreme instructions

    0s 43ms/sten

Probability of this sentence: 6.383414781956855e-56
### TEMP 10
1/1 -
                         0s 36ms/step
1/1

    0s 35ms/step

1/1

    Os 33ms/sten

1/1
                         0s 33ms/step
                         - 0s 34ms/step
1/1 -
I love Tehsil concert Delta told Asteroid
                         - 0s 39ms/step
Probability of this sentence: 4.584347471233376e-55
Probability of "I love cupcakes": 0
```

### TFMP 0.1

Enter word:	love		
Predict Nex	t Word		
Predicted word	for "love": René		
1/1		- 05	203ms/step
René			